

Claims

1. A conductor material for an actuator element,
the conductor material comprising a gel comprising
carbon nanotubes and an ionic liquid.

5 2. An electrode layer for an actuator element,
the electrode layer comprising a gel composition
comprising carbon nanotubes, an ionic liquid and a polymer.

3. An ion-conductive layer for an actuator element,
the ion-conductive layer comprising a gel composition
10 comprising an ionic liquid and a polymer.

4. An actuator element wherein at least two electrode
layers, each of which is mutually insulated and comprises a gel
composition comprising carbon nanotubes, an ionic liquid and a
polymer, are formed on the surface of an ion-conductive layer
15 comprising a gel composition comprising an ionic liquid and a
polymer,

the actuator element being capable of being flexed or
deformed by creating a potential difference between the electrode
layers.

20 5. A method for producing the actuator element of claim
4 comprising the step of laminating a gel composition comprising
carbon nanotubes, an ionic liquid and a polymer with a gel
composition comprising an ionic liquid and a polymer, by casting,
coating, printing, extrusion, or injection to form electrode
25 layers and an ion-conductive layer.

6. An actuator element wherein at least two electrode
layers, each of which is mutually insulated and comprises a gel
composition comprising carbon nanotubes, an ionic liquid and a
polymer, are formed on the surface of an ion-conductive layer
30 comprising a gel composition comprising an ionic liquid and a
polymer, and a conductive layer is formed on the surface of each
electrode layer,

the actuator element being capable of being flexed or
deformed by creating a potential difference between the
35 conductive layers.

7. A method for producing the actuator element of claim
6 comprising the step of laminating a gel composition comprising
carbon nanotubes, an ionic liquid and a polymer with a gel
composition comprising an ionic liquid and a polymer, by casting,
5 coating, printing, extrusion, or injection to form electrode
layers and an ion-conductive layer.